THE VETERINARY RECORD

A Weekly Journal for the Profession.

No. 550. JANUARY 21, 1899. Vol. XI.

Burns and Scalds.

Though these injuries are not common to the domestic animals they occur quite as frequently as some conditions about which we hear much more. There are two questions which force themselves prominently on the practitioner in the presence of serious burns or scalds—(1) Is the suffering such that a possible cure is justifiable; (2) Is the probable recovery one which will be accompanied by fitness for work, or not. We do not propose to discuss the matter here, we only desire to draw attention to a paper read before a recent meeting of the Central V.M.S. by Major Nunn, which will be found on another page. It is well worth reading.

Clinical Cases.

January is almost gone and busy practitioners will soon have sent out all their accounts. When this dreary business is accomplished we hope an enthusiast here and there may find time to lighten up the pages of *The Record* with a report of some interesting case. We have been well treated and we are grateful; but as no amount of good extracts seems to afford the same satisfaction as a page of "clinicals" we are compelled to beg the assistance of practitioners.

We prefer a case narrated simply but fully, and we do not consider it improved by the addition of a lot of crude pathological hypotheses. What adds most interest to a case is a description of the *post-mortem* or a photograph of anything that can be nicely represented. When there is no post-mortem the diagnosis is, of course, always correct; when there is one it is good policy for the reporter not to make his diagnosis too positively exact with the lesions found. Men are so sceptical of each other's wisdom that an exhibition of more than usual skill begets unkind doubts. This is only written as a warning to the younger of our brethren.

Bribes or Presents.

The report of an appeal case, we reprint from *The Times*, is interesting. A person bought a horse subject to its being examined and approved by a veterinary surgeon. The horse was examined and passed sound. It was found soon to be unsound, and the veterinary surgeon first employed confessed to having accepted a bonus, or a bribe, or a commission—whatever it is called—from the vendor. The High Court has decided that this vitiated the contract. The sellers of horses should note this decision, and not put themselves into a false position by offering professional men money without any honest consideration for it. They may suffer heavily in a similar case to that reported—so too may the examiner, if the Registration Committee hear of his little transaction.

THE ARMY VETERINARY DEPARTMENT.

The members of the profession will learn with regret that, up to the present time, all attempts to obtain for the Army Veterinary Department the same privileges, as regards military titles, recently conferred upon the Royal Army Medical Corps, have been unsuccessful. The omission to place the two medical branches of the Army on the same footing in this respect has caused a widespread feeling of discontent amongst the officers of the A.V.D., and is altogether unaccountable, as hitherto the various systemic changes occurring from time to time in the late Army Medical Staff have generally been followed by similar changes in the A.V.D. The substitution of the present department for the former regimental system, and the granting of compound military titles may be given as examples.

This being the case, and in consideration of the fact that the duties of the two services are practically of the same nature, the officers of the A.V.D. very naturally expected that the recent warrant abolishing the prefix of "Surgeon" in the Royal Army Medical Corps and Indian Medical Staff, would be applied to them also. The omission to grant this simple act of justice not only reflects upon the profession generally but tends to cast a slur upon a body of officers who have always been spoken of in the highest terms by various military authorities, and who have been commended, from time to time, for performing their duties in a zealous, efficient, and unobtrusive manner. The officers of the A.V.D. have never been addicted to airing their grievances in the columns of the press or resorting to other methods of agitation, but it is considered that the time has arrived for the members of their profession, and the public generally, to be made acquainted with the invidious distinction which now exists.

The Veterinary Department is the only branch of the Army with a prefix. The *officers of all other departments*, with the exception of the chaplains, including the Subordinate Medical Service in India, have military titles, either substantive or honorary, without prefix.

One of the reasons given for the abolition of the Army Medical prefix was its "cumbrous nature." Surely then there is all the more reason for the removal of the much more unwieldy prefix from the A.V.D. Its retention is altogether unnecessary, and this is so far recognised that it is now very generally omitted in all but strictly official correspondence. Veterinary-Lieutenant-Colonel Jones, Army Veterinary Department, is a title at once ponderous and tautological. The presence of the prefix may not

alter the fact that the officer is a bona-fide lieutenant-colonel in the Army, as the rank is substantive, but it is this invidious distinguishing mark to which he objects, as comparing him unfavourably with officers of the same rank in all other branches of the military service. He naturally asks why his department should be the only one holding this unique position? The Army Medical Staff objected to the prefix of "Surgeon" and it was abolished. The Army Veterinary Department asks for the same boon, and it is hoped that it may be granted, and a deep-seated grievance removed.

It is difficult to understand why there should be any objection to placing the A.V.D. on the same footing with other services in this respect. It can hardly be because veterinary officers have no corps command, for the same excuse would equally apply to the officers of the Indian medical service, paymasters, quartermasters, schoolmasters etc., none of whom have any corps command, while all possess military titles.

Neither can it be alleged that their duties are essentially of a civil nature, for veterinary officers have, under the General or other military commanding officer, absolute control of all military horses, infirmaries, station hospitals in India, field hospitals on active service, the Army Veterinary School, Aldershot, and the Royal Horse Infirmary, Woolwich; including such responsibilities as discipline, men's rations, parades, etc. Moreover, veterinary officers are required to be present at daily stable and other parades, and from the nature of their duties in barracks and camps they are brought more closely into contact with the officers, non-commissioned officers, and men of the corps to which they are attached than the officers of any other department of the Army.

It is believed that by placing veterinary officers upon the same footing with medical officers, as regards the abolition of the prefix only, the discontent which at present exists will be removed, the best graduates from the Colleges will be attracted to the service, and the present difficulty in obtaining suitable candidates will disappear.

A CURIOUS ACCIDENT.

By J. Wilson-Barker, M.R.C.V.S., Staines.

The following accident happened a few weeks back at Halliford, a few miles from Staines.

A 9-year-old mare. 16 hands, the property of a hotel and cab proprietor, was harnessed to a Victoria to take a fare, and had only travelled 200 yards from the hotel when on a rough piece of road she stumbled and fell, and after several attempts to rise failed. The groom got off his seat as soon as possible and found the large metacarpal bone right through the skin and on the ground, the foot being turned round in a similar position to that shown in photograph (fig 1.)

A short time after the accident I happened to be driving in the district and hearing of the accident, through the kindness of the owner was fortunate enough to secure the leg, and when I reached home carefully examined it. It was the near fore leg, and the bone shot out on the inside of the leg (fig 2). The incision through the skin was as sharp as if a knife had cut it, The bones did not appear, on a macroscopic examination, to be diseased. No tendons were fractured.

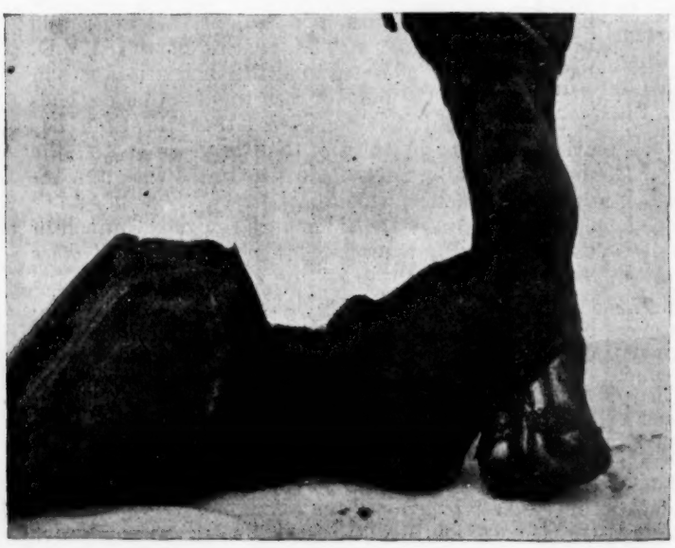

Fig. 1.

Fig. 2.

RABIES AND HYDROPHOBIA.

A paragraph has lately appeared in the Indian papers to the following effect:—

"A man was bitten by a dog three months ago, and was sent off at once to the Pasteur Institute in Paris. He went through the several inoculations and returned apparently well. The patient is said to have died about a fortnight ago from hydrophobia. It is further stated that the dog, which bit the man, is still alive and *has not shown any signs of rabies*."

These facts as given may require verification, but if accepted they give rise to many a doubt:

Firstly, according to our present knowledge, hydrophobia in man can only be induced by the bite of a rabid animal. I am aware that in former years it was the opinion of some that a bite from a dog in a condition of special excitement or furor might cause hydrophobia in man, but this theory is quite incompatible with the specific nature of the disease.

Secondly, Pasteur teaches that rabies in the dog is invariably fatal, his words are: "Every dog, whether it eats or not, that is attacked with rabies, dies in a few days. When it eats, death is delayed a short time, that is all. It cannot live more than 10 days, and will probably die on the eighth day. If it survives the 10th day you may have an easy mind."

The most satisfactory solution of this problem is to think that the patient was bitten by some other dog, which was rabid, and the blame laid to the wrong dog.

It is very disturbing to one's confidence to think that a patient who was bitten by a dog which *has not shown any signs of rabies* should die from hydrophobia after submitting to the preventive inoculations at the Pasteur Institute.

Vet.-Lieut.-Col. W. S. Adams.

Kirkee, Dec. 30th, 1898.

ABSTRACTS FROM FOREIGN JOURNALS.

The Potassium Iodide Treatment of Milk Fever. By Departmental Veterinary Surgeon Nevermann, of Bremervörde.

Nevermann, in order to ascertain and prove the value of the potassium iodide treatment of milk fever, has obtained and published in tabular form records of the experiences of 41 veterinary surgeons which have been sent to him. Totalled these cases give 234 cows treated, 183 recoveries, 31 slaughtered, and 20 deaths. In the great majority of cases 10 grammes of potassium iodide was infused, and where necessary five grammes were used in repeating the dose.

Leaving the cases in which slaughter was effected quite out of the reckoning, out of 321 cows treated, 296 recovered, or 92 per cent.; and 25 died, or 8 per cent. In some cases those animals slaughtered would certainly have died. On the other hand in many cases the animal was slaughtered too early.

The percentage of recoveries given above shows the undoubted value of the potassium iodide treatment.

For the sake of comparison I give a record of cases not treated with potassium iodide. The mortality was as follows:—

	Deaths.
Frank Goring (721 cases)	40·8 per cent.
Saint Cyr (466 cases)	45 ,,
Stockfleith	50 ,,
Statistics of Bavarian Veterinary Surgeons	48 ,,
Ehrhardt	50 ,,
de Bruin	66 ,,

Of 214 cases in which the time of the illness is given, 7·9 per cent. occurred first day, 51·8 second day, 24·8 third day, 8·9 fourth day, rest 6·5 per cent. Three-quarters of the cases occurred on the second and third day after calving, as may be seen.

Schmidt, of Buxtehude, and Grebe, of Stormnelu, say that they have obtained the best results by a repetition of the dose of pot. iodide. Still, one must conclude that it is only necessary to repeat the dose if the illness is specially severe.

I hold from the above records that a repetition of the dose brings no advantage in the great majority of cases. In very severe cases the dose may be repeated after some hours, but should not be increased. Inflammation of the udder was only noticed in two cases. I think disinfection of the udder and instruments is of great importance, and further that the potassium iodide should always be dissolved in freshly boiled water, notwithstanding that Grasshorn, of Ovelgöune reports 11 recoveries out of 11 cases which were injected with the drug dissolved in cold rain water.

One noticeable point of great value is that this method of treatment does away with the danger of choking or, as the Germans call it, drenching pneumonia.

Most of the veterinary surgeons lay stress on putting the cow in a comfortable position while she is lying.

At what time a cow should be milked after the infusion, little can be gleaned from the reports. I myself always advise milking as soon as the cow gets up and then only three times daily. About the first milk drawn away after injection I have noticed nothing abnormal either in colour, smell, or taste. The secretion of milk returns again in full in eight days at the latest.

As results of the injection I have noticed two things, viz., a profuse diarrhœa and a rather copious nasal secretion. Both diarrhœa and nasal flux disappeared in about 24 hours without treatment. Nevermann rightly thinks that a collection of statistics like this shows the undoubted great value of the potassium iodide treatment.—(*Berliner Thierarzt Woch.*)

G. M.

New Contribution to the Study of Equine Pasteurellosis (Influenza, Pneumonia, etc.) By M. Lignières, Paris.

Under the name of equine pasteurellosis I include all forms of the typhoid affection determined by the

cocco-bacillus the description of which I gave at our meeting of July 22nd, 1897.*

Since this time, I have taken every opportunity to clear up certain parts of the question that remained obscure, and I am pleased to be able to communicate them to you to-day. My fresh observations were made in France, and especially in the Argentine, where the classical form of influenza is very much more frequently observed than here, but on the other hand, horses there being of less value I was able to experiment under favourable conditions.

The cocco-bacillus specific of equine pasteurellosis is found also in the Argentine Republic.

Shortly after my arrival in Buenos Aires our *confrère*, M. Even, who well knew of my researches on Influenza, took me to visit the stud of the Plata Tramway Company, where an affection had declared itself, so serious that in less than three days the line was closed for want of horses.

The disease commenced suddenly on the 6th of January, in a large stable containing 105 "Cuiollos"—small horses of the country noted for their energy and excellent quality. On the 7th nine died; 8th, sixteen; 9th to 10th, four.

We arrived there on the 11th and found about fifteen sick horses, of which a few presented the typical symptoms of influenza, namely, considerable depression, somnolence, vacillation during progression swollen eyelids, tears running down the face, mahogany red conjunctival mucous membrane with a few petechiæ, hind limbs slightly edematous, pulse small and thready, accelerated breathing, and temperature of 104 F. to 106 F.

One of them, in which we diagnosed pleuro-pneumonia, was very bad. He was slaughtered. At the autopsy we found the following lesions: inflammation of the peritoneum, pleura and pericardium with very limpid but not abundant effusion. On the serous membranes we saw a few small hæmorrhagic patches. The spleen was voluminous and soft; the kidneys were congested and very much more friable than in a normal state; their capsule was surrounded by a rusty edematous serosity. The liver was slightly yellow, whilst the blood was of an almost black tint. The intestines were altered, and presented a few lesions of intestinal congestion. The walls of the large colon were thickened and the mesenteric vessels were surrounded by an abundant yellowish œdema. As to the lymphatic glands they were hypertrophied and hæmorrhagic. In the lungs the presence of hepatised foci of the size not exceeding that of a small were noted.

Bacteriological examinations enabled us to isolate a microbe of which the following are the principal characters: microbe having a cocco-bacillary form, scarcely as large as that of fowl cholera capable of taking the bacillary form, immobile, not taking Gram's stain, colouring very badly with methylene blue, safranine or vesuvine, but better with the assistance of gentian violet and rubine. The first cultures were difficult to obtain, and even when the microbe becomes habituated to artificial media it grows very tardily disturbing the medium if it is peptone-bouillon, or giving small transparent and bluish colonies on gelose and gelatine; in this last medium, which does not liquefy, the culture is very uncertain and at best very slow in growing. Milk is never coagulated, and potato does not give any culture. The microbe grows very much more freely in presence of air than in vacuo, and after culture in bouillon a special odour is detected.

It is very pathogenic for the guinea-pig, rabbit, mouse, ass, and horse, less for the sheep, carnivora, pig, and ox, and very slightly for the white rat and birds.

It will be seen that all these characters very much approach those of the typhoid bacillus. I did not point out in my first communication the very special odour of the cultures in bouillon peptone, nor the possibility of seeing a slight and slow culture thriving without air. I recognised these properties later.

I was able to isolate the same microbe in fifteen subjects taken from different localities and presenting the various forms of the typhoid affection. Thus, I saw in the infirmary of M. Even, a horse which had loss of appetite for three days, slight depression and epileptiform attacks which caused the animal to fall on the ground and pirouette the eyeball about in its socket. After each seizure the horse did not seem to be dangerously ill, but these recurred always more frequently, and on the third day the animal succumbed, without which we should have been able to affirm our diagnosis. We only knew that the subject came from a stable infected by influenza. Bacteriological researches showed the presence of typhoid cocco-bacilli in a relatively abundant quantity in the blood, which is exceptional.

I have also encountered the typhoid form of equine pasteurellosis in the Pampas, upon horses reared in a wild state.

I have made a certain number of inoculations which go to confirm the first experimental results. Nothing is easier than to obtain nearly all the natural forms, especially if we use young horses.

The gastro-intestinal localisation is very easily reproduced by intravenous inoculation of ½ c.c. of culture in peritoneum of guinea-pig, or 3 or 4 c.c. of culture in bouillon peptone. At the same time we always have serious general symptoms: depression, muscular tremors, rolling gait during progression, mahogany red mucous membranes, swollen limbs, accelerated pulse and respiration, and elevated temperature.

I have also reproduced the rapid form, pleurisy, pericarditis, nervous forms, ophthalmia, icterus, and pneumonia. As in the natural affection, we can with impunity inoculate under the skin of the horse a few c.c. of blood of affected or dead animals; moreover, insemination always remains sterile, save in a few cases when death supervenes in twenty-four or thirty-six hours.

All these researches, therefore, well confirm the specificity of the typhoid cocco-bacillus. The experimental inoculations are, I believe, very demonstrative, they go to show that we may easily reproduce the typhoid form of equine pasteurellosis, and the majority, if not all the complications that in practice we have already designated under the name of com-

* *Vide Journal of Comparative Pathology and Therapeutics*, Dec., 1898, p. 312-341.

plications. You will probably remember the two cases of pneumonia that I obtained in France in the horse, one by intra-venous injection, and the other, very much more typical, by subcutaneous inoculation of a virus which determined a double subacute pneumonia, causing death in four days, with almost pure cocco-bacilli in the lungs.

I resume this first part of my communication in saying the classical form of typhoid fever (influenza) is a pasteurellosis determined by a well determined special cocco-bacillus. Experimentation, in agreement with clinique, shows us the possibility of causing localisations in the intestines, serous membranes, articular cavities, nervous system, chest, etc., with this specific cocco-bacillus.—(*Ree. Méd. Vet. d'Alfort*, Dec. 30th, 1898.)

H. G.

(To be continued.)

VETERINARY SOCIETIES.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

An ordinary general meeting was held on Thursday night, 5th inst., at the Royal College of Veterinary Surgeons, 10 Red Lion Square, W.C.; Mr. Sutcliffe Hurndall, the president, occupied the chair. There were present: Fellows, Messrs. Butters, Wragg, Singleton, Stanton, MacCormick, Macqueen, Major Phillips, Major J. A. Nunn, Messrs. Perryman, Payne, Manton, King, Porch, Nye, Samson, W.E. Taylor, Lieut.-Cols. Duck and Durrant, Harrison, Bell, Brown, Rowe, and W. S. Mulvey, and two visitors.

The minutes of the previous meeting were, on the motion of Professor Macqueen, seconded by Major Phillips, taken as read.

Correspondence.

Letters and telegrams of regret at inability to attend were read from Mr. Wheatley (Reading), Mr. Villar, and Mr. Flook.

Letter from Professor M'Fadyean, with respect to the deputation which had waited upon him, and confirming his communication of November 17th, in which he tendered his resignation.

Letter from Mr. Mahon with regard to instruments.

As arising out of the minutes, Mr. Wragg reported that, as instructed, the Deputation had duly waited upon Professors Penberthy and M'Fadyean. The former expressed himself in similar terms to his letter of Nov. 17th, but said he would like to be allowed time to further consider his decision. Professor M'Fadyean, however, whilst deeply sensible of the advantages he was relinquishing in severing his connection with the Society could not see his way to alter his decision to resign. His resignation was accepted with much regret as was also that of Mr. Henry Gray.

Election and Nominations.

Vet.Lieut. St. Clair Houston, who was nominated at the previous meeting, was unanimously elected a Fellow of the Society.

Mr. E. L. Stroud and Vet.-Lieut.-Col. G. J. R. Rayment were nominated for election as Fellows of the Society.

Remnants of various instruments, viz., 2 microscopes, 1 damaged; set farmer Miles' Hobbles; 4 broken microscope lamps, the property of the Society, previously in the possession of the late hon. secretary—Mr. Mahon—were received from him, and after some discussion it was unanimously decided to sell same. Professor Macqueen undertook to dispose of them to the best advantage.

The Chairman: Before proceeding to the next business I will ask Major Nunn to pass round a photo which he has, and which I believe will interest the members.

Major Nunn: I thought the photo referred to would prove of interest. It illustrates the application of the Rontgen Rays. It appears that some children had been feeding a dog, weighing about 10 lbs., with sugar, and mischievously forced a tea-spoon down its throat. The animal was submitted to the Rontgen Rays on the fluorescent screen, The animal was prepared for operation on the 21st Oct., and operated on on the following day. Gastrotomy was performed and the spoon removed. The animal was discharged from the hospital on the 26th same month completely cured.

In the unavoidable absence of Mr. Flook, and Mr. Porch not being prepared to open the discussion, as he had not expected to be able to attend the meeting, the discussion on the paper by Mr. Flook on "Operation Wounds and a Resumé of Methods employed in their Treatment," read at the previous meeting, was postponed.

Prof. Macqueen: I have been looking over these old diplomas which were received with the instruments, and although I cannot see anything in the rules with regard to same, I do not see why members should not be presented with one, or something similar, upon qualifying. I hope I am not out of order in mentioning the matter.

The Chairman: It is of course a question for the Council to consider.

Mr. Wragg: When the Society was first formed I believe every member had one of these diplomas.

It was then proposed by Professor Macqueen, and seconded by Mr. McCormack, that "The attention of the Council be drawn to the existence of these diplomas, in order that the Council might consider the advisability of making further use of them." Carried.

BURNS AND SCALDS.

By Veterinary-Major J. A. Nunn, A.V.D., C.I.E., D.S.O.

Gentlemen,—I am afraid the subject of this paper is not one of general interest such as falls within the observation of every day practice, but this very fact must be my apology for bringing such a matter before the notice of this Society, trusting that those members who have had much experience with such accidents will give us the benefit of their observations.

Under the heading "Burns and Scalds" I propose to deal with the effects and treatment of the action of heat to the animal body, whether by the actual application of flame, a heated substance in a solid or fluid form, or of steam, these being considered by Baron Dupuytren, the eminent French surgeon, as being true burns. There is, however, another class of injury in which heat plays a part, viz., the effects of electricity and lightning and chemical substances. These Dupuytren does not class as true burns, and deals with them separately.

A scald is the result of headed fluid or steam coming in contact with the body, and although at first sight it might be supposed that there would be a difference in the results of a fluid or vapour and that of a piece of heated metal or flame, there is practically none at all. The method in which heat comes in contact with the body is not to be considered, and in equine practice in England the most common is animals being confined in a

burning building, where injuries inflicted are partly caused by the direct action of the flame, and partly by heat without flame actually touching the body. In passing I would remark that these cases are often concurrent with pulmonary complication, laryngitis and conjunctivitis, the result of smoke.

In South Africa I had experience of several bad cases of burns from grass fires sweeping down on animals that were tied up, both horses and oxen, in camp. In that country the ground is covered with long grass, which at the end of the summer becomes as dry as tinder and readily takes fire, indeed on veldt farms it is usually burnt to allow of the new grass springing up with the rain. Stabling being scarce, animals are generally turned out to graze knee-haltered. The fire runs along in the grass with the breeze, and a very slight change in the wind will make it alter its direction. Animals being haltered are unable to get out of the way, and burns are not uncommon. If the grass is not very high the effects are not severe, but I have seen some very severe injuries to the feet resulting in bad laminitis and casting of the hoofs.

I have three times had to treat patients from the effects of gundowder explosions in India; two were bullocks and one a pony. All of them were caused by the carelessness of native drivers smoking while sitting in the carts in which such dangerous loads were being carried. The case of the pony was somewhat peculiar. The animal was drawing an eka or two wheeled gig, which was conveying the owner, several of his friends, and a quantity of native made fireworks to a feast. After the fashion of orientals the party were smoking and the load caught fire, the result being that the pyrotechnical display was premature on the road side. The driver and passengers escaped with but trifling injuries, but the pony was badly burned. The animal was under treatment for a considerable period, but made a good recovery. What was remarkable was the permanent colouring or tattooing, of a bluish colour, that remained on the white skin of the perineum scrotum flank and sheath. This was not noticeable in the two bullocks above mentioned, and I can only account for it by the fact that in the first case the fireworks went off one after the other, driving the particles into the skin with considerable force, while in the second the gunpowder was loose in a box and went off with one explosion, the effects being chiefly upwards and not of sufficient force to drive the particles deep enough into the thick skin of the bullock to leave a permanent mark.

In the human being clothes catching fire is a fruitful cause of burns, but in our patients is not so, as during the summer months no clothes are worn, and when they are in the winter they are of woollen material which is not inflammable. In fact from some statistics that have recently been published by far the largest proportion of deaths from burning clothing have been amongst women who use inflammable material in their clothes; scarcely any from this particular cause being amongst men who wear cloth or flannel. The same would apply to our patients. If they have clothing at all it would be wool, hemp, or some non-combustible fabric. Gas explosions also account for a number of fatal cases in human beings, but I have never seen one in animals. As, however, most of my life has been passed in places where there is no gas, I have no experience on this point, but trust that some member of the Society will be able to give some information upon it.

I have seen bad burns from oil lamps, both from explosions and from spilling the oil through carelessness. A very bad case came under my observation at Kimberley, in South Africa, about which I was consulted by a member of the profession who was treating the case. The patient was a valuable thoroughbred mare that had been imported from England, the property of the then Attorney General of the Cape, and two other leading colonists. She was in training, and had been brought to Kimberley for the races. In the centre of the beam of the stable in which she was lodged was a hook on which an ordinary hurricane lantern was suspended. The only way to remove this was a stick with a hook at the end by which it was lifted on and off, as goods are in a shop. While it was being put either up or down the mare kicked at the groom, a "Cape boy," who let the lamp drop on her back, over which the burning oil flowed. The stable was luckily corrugated iron, and there was no bedding down, or the mare would have been burned to death. When I saw the animal some days after there was a large slough over the loins, and although it gradually healed, I believe she was never much good for racing afterwards, as the parts contracted, adhesion took place between the muscle and skin, and her galloping powers were interfered with.

The old pattern singeing lamp with oil or naphtha used to be a source of danger in inexperienced hands, and only a year ago I saw two cases of bad burns from this cause. When the flame burned low the lamp was tilted up, and unless care was taken some of the oil was very likely to fall on the skin. The introduction of gas has much minimised this danger.

Injuries from animals falling into burning material must be uncommon in England. In India they are by no means rare. It is the custom in that country to burn stable and other refuse in pits outside the town; also bricks are baked in long trenches, not in kilns as in England. Animals being turned out to graze will fall into these traps, and when hobbled are unable to get out. Very severe injuries are the result of such accidents.

Scalds amongst equines are not common. They are usually the results of accidents such as the bursting of steam pipes or boiler explosions. I saw an accident of this nature on board ship caused by the bursting of the main steam pipe that ran from the boilers below to one of the winches on deck. Several mules were badly scalded before the steam could be turned off. I also once had a patient with the mouth scalded from a warm drench being administered. The membrane of the mouth, tongue, pharynx and œsophagus were sloughing and the animal in a state of high fever. The case ended fatally, but such gross ignorance could hardly be met with in this country.

In dogs my experience is that scalds are by no means uncommon. They live more in the house and in contact with their masters. I have seen scalds take place from dogs sleeping in front of the fire on which a kettle is boiling. The coals give way, and the kettle sinking forward a stream of boiling water from the spout is poured over the animal. Persons carrying about hot water and tripping over dogs also often causes scalds. I have also seen cases of scalds from boiling water being maliciously thrown over dogs.

It must be remembered that if the action of the steam is prolonged that there is usually injury to the mucous membrane of the respiratory tract, and in my experience this is usually fatal. The reason is, I think, that for the respiratory organs in our patients to be injured the volume of steam must be very great, and therefore the injuries to the surface of the body will be severe in a corresponding degree. In the accident I mentioned above of a steam pipe bursting on board ship, if my memory serves me right three of the five mules injured died. These three stood next to the place where the pipe burst and all showed pulmonary symptoms. It must also be remembered that boiling water is not so destructive as thick viscid fluids such as oil, salt solutions, or saccharine matter, and of this fact I think most of us have had practical experience in our youth in the shape of the agony caused in attempting to eat hot raspberry jam tarts. An injury which is a compound

between a scald and a burn is caused by the malicious pouring of turpentine or kerosine oil over dogs aud setting it on fire. Such offences were not unknown some years ago, but lately they have not been heard of. Possibly the very severe sentences inflicted on the perpetrators of such abominable cruelty had a wholesome effect.

Scalds do not produce such deep injuries as those caused by flame, or heated metal, but as they are likely to extend over a large surface of the body they are dangerous.

Classification of Burns.

There have been many classifications of burns proposed, mostly by French writers, many of them being fanciful and pedantic in the extreme. Dupuytren's and Boyer's are those most commonly recognised. The former divides burns into 6 classes :

1. Those characterised by erythema of the skin.
2. By inflammation of the skin, elevation of the epidermis, and the formation of vesicles.
3. Destruction of a portion of the thickness of the true skin.
4. Destruction of the whole thickness of the true skin down to the connective tissue.
5. The above with destruction of the muscular tissue.
6. Where the whole limb is disorganised and carbonised.

Boyer's classification is into degrees, viz., hyperæmia, inflammation, and mortification. This has been adopted by Mr. Christopher Heath and Dr. Thomson Smith with merely a slight alteration in the wording, and is what I propose to follow.

Burns of the first degree, which Boyer distinguishes by congestion, are simple scorching of the surface. They are caused by a radiated heat, a very slight application of flame, or a moderately heated solid or fluid. In tropical countries burns of this degree are caused by the bit being left in the sun and put into the horse's mouth hot, when the angles of the mouth are injured. The characteristics of this degree of burn is well marked in such cases in white-faced horses. If the skin is destitute of pigment there will be erythematous redness which will disappear on pressure. The extent of this redness corresponds with the burnt surface, but its edges are ill-defined, and not clearly marked out. The skin is dry, harsh to the touch, and may be slightly swollen and elevated. In mild cases this redness, which of course cannot be detected in dark skinned animals, will disappear in a few hours, but in severer ones it remains for some days, when the epidermis desquamates. As a rule burns of the first degree are not dangerous and require but little treatment, but they follow Dupuytren's law, viz., that the severety of a burn depends on the extent of surface injured rather than on the depth it penetrates into the tissue. This authority states that in the human being that even a burn of the first degree is fatal if two-thirds of the area of the surface of the body is involved. Whether the same rule would apply to our patients I cannot state, for I can find no data to go upon, but this is a point on which perhaps some member can enlighten me.

Burns of the Second degree distinguished in Boyer's classification by vesication.

If the skin is white there will be one or more patches of erythema, and on each patch there will be numerous vesicles containing a clear yellow serum. These vesicles vary in size in an unaccountable manner. On the same injured surface they may be seen from the size of a sixpence to large bags of fluid a foot or more in diameter. If the case does well the heat and redness of the skin soon pass away, the vesicles break, and the fluid escapes, the epidermis dries up and desquamates, leaving a smooth surface underneath, which is denuded of hair for the time being. Care must be taken to prevent the vesicles from being permanently ruptured, or the epidermis, which is a protective to the true skin, from being rubbed off, as in this case inflammation and suppuration is likely to take place, and even sloughing ; but as a rule in even severe burns of the second degree there is no permanent scar left. Burns of the second degree are generally caused by scalds or the contact of heated metal for a very short time.

Burns of the third degree, distinguished by mortification in Boyer' classification, can be divided into two classes, mild and severe. I first propose to deal with the mild burn. In this not only the epidermis but a portion of the true skin is destroyed. Sloughs of a dark colour are cast off, which are sometimes dry and dessicated, at others moist and soft, and then they often have vesicles on their surface containing blood-stained fluid. The sound skin round the burn is in a state of erythema, and frequently covered with small vesicles as in a burn of the second degree.

Sir Robert Christison proved that when such an injury was inflicted on the human body during life the dead tissue was surrounded by a narrow band of dead white and then by a red ring, caused by extravasation of blood and injection of the minute capillaries. This red ring again gradually shades off into the healthy skin, but the red blush extends a considerable distance from the burn. The fact is mentioned in Taylor's "Medical Jurisprudence," also some experiments by which it was shown that the application of heat only a very short time after death, even before the body had got cold, would not produce this appearance. I have not been able to detect the red zone in animals, but the white ring is clearly marked. If the case goes favourably the sloughs are thrown off in about 3 weeks, leaving a greyish surface studded over with red points which heals with a smooth scar ; usually the hair is destroyed, but sometimes some are left and the patch is not always quite bald. Owing to the presence of sound skin beneath the scar is generally freely moveable, as there are no adhesions to the deeper structures, and for the same reason there is no distortion by contraction.

Severer form of wounds of the third degree. In these the whole of the skin is destroyed as well as a portion of the connective tissue, or even portions of the muscles and deep-seated structures. Burns of this nature are only caused by prolonged applications of flame or heat to the body, and hence are not so common as those of the first and second degree. A hard dry eschar is formed which when cast off leaves the muscles, vessels and deep tissues exposed, and in this process very frequently severe and obstinate hæmorrhage takes place. Naturally when there is such an extensive destruction of tissue the pit of the resulting ulcer is very deep, and heals slowly with a good deal of exhausting suppuration.

These are the chief local characteristics of burns, but with the primary lesion there is systemic disturbance which is, by Boyer, classified into three stages, viz., prostration, reaction, and suppuration. In passing I would point out that in the human subject one of the leading features in these stages is the amount of pain present. Of this our patients are unable to give us any indication, beyond the fact that we know that they are in pain to a greater or lesser degree according to the nature of the injury, and I think that it is only reasonable to suppose that with burns of different degrees there are different degrees of pain.

In the first stage in which there is prostration and congestion, pain is the leading feature, and in burns of the second degree, especially if caused by steam or boiling fluid, it is very great if the injured surface is large. Pain will be aggravated in injuries of this nature if the vesicles are ruptured and the epidermis rubbed off. In this stage there are often severe rigors, and thirst, and in both dogs and equines I have noticed a constant desire to urinate. This was also observed by M. Nelaton

in the human being. The period of inflammatory reaction varies with the nature of the burn, being longer in those of the third than the first and second degrees, or in other words is *in ratio* with the amount of tissue destroyed. There is usually a certain amount of fever, but unless there is inflammation of some of the viscera the temperature is not as a rule high. If an extensive surface of the thorax is burnt, thoracic complications, such as broncho-pneumonia and pleurisy are commonly seen, with severe and obstinate coughing. There appears to be considerable pain just before the sloughs are given off, and as has been mentioned there may be considerable loss of blood.

The third, or suppurative stage, is the time comprised between the casting off of the slough and the healing of the exposed surface. There is profuse discharge, and if the injury be large and deep a considerable degree of fever. The ordinary complications of a wound, such as cellulitis, sloughing, pyæmia, and septicæmia may supervene at this stage; also inflammatory pulmonary trouble. In the human being ulceration of the duodenum is a somewhat frequent and dangerous complication of burns, especially in young subjects. Curling and Holmes found it in 16 out of 125 fatal cases. Johnson Smith in 25 cases found 6 were under 5 years of age, 15 under 10, and 1 above 30; and in the same series of cases, 3 occurred in the first week, 8 the second, 6 the third, 1 in the fourth, and 2 in the fifth week after the injury. Mr. Erichsen reported a case in which symptoms of intestinal ulceration were seen on the second day. I have never seen this complication in the larger animals, but I have twice noticed considerable inflammation of the small intestines in dogs, accompanied during life with the passage of blood in the fæces, which were dark in colour, fluid and offensive. This, however, is another point on which I trust to be instructed before the discussion on this paper is finished.

Treatment.

Treatment is local and systemic. In long-haired animals it is advisable, if possible, to remove the hair. This is, no doubt, a tedious process and great care must be exercised, for if roughly handled the epidermis will be pulled off and the raw surface exposed. But it can be done with a pair of sharp scissors, and is not so difficult as might at first be imagined, as a considerable part will be singed. In severe burns I think this is very necessary, otherwise when the suppurative stage is reached it will be impossible to keep the part clean.

In burns of the first degree the first indication is to remove pain which, if accomplished, brings about resolution in a very short time. This is best done by cold application. In large animals, if the injury is on the lower part of a limb, it can be put into a knee bucket, or if on any other part a hose pipe gently played over it will have a good effect. In foreign countries I have kept horses standing in a stream or pond for the same purpose, and doubless this could be done, in country places in England. Lead lotion, or weak vinegar and water is also useful, and in small animals, a domestic remedy, viz., dilute Eau de Cologne, can generally be obtained. The part should then be wrapped up in thick layers of cotton wool or tow, which should not be removed, and little more need be done. There is no occasion to use medicated or absorbent wool; that obtained from a draper, cotton waste used for cleaning machinery, or the flock out of a mattress answers perfectly well for our patients.

In burns of the second degree, where there is vesication, the object to be kept in view is to exclude the air. It is advisable to make one or more very small punctures with a needle at the lower part of each vesicle to allow the fluid to drain out slowly, but taking great care not to rupture them. The part should then be covered with some thick dressing, of which there have been many brought to notice. Fine wheat flour sprinkled thickly on the part with a dredger, has the advantage of being easily obtained, but the drawback is that if the part should suppurate it cakes, becomes foul, and is not then easily removed. Carron oil, linseed oil, and lime water in equal parts is another popular application In small animals olive or almond oil may be substituted for linseed. It can be rendered more efficacious if a small quantity of carbolic acid is added to it. Carbolic oil, olive oil, and yolk of egg in equal parts, chalk, zinc ointment, carbonate of lead ointment, castor oil and collodion (1 to 2 parts), a saturated solution of bicarbonate of potash, an emulsion of bicarbonate of potash and linseed oil, glycerine and boracic acid, white lead or putty made into a paste with oil, and iodide of starch (1 part tincture iodine to 2½ starch) have all been recommended; also when there is great vesication a solution of nitrate of silver (20 grains to the oz.). I have found a mixture of subnitrate of bismuth and glycerine a good application, relieving pain, but it is expensive and really only applicable for small animals. Cotton wool should also be used as before described, but in this case should be antiseptic. It can be used by putting it directly round the limb, but this I think unadvisable, as it is difficult to remove if required without tearing off some of the epidermis to which it sticks. It is a better plan to first apply one of the emulsions or ointments above mentioned and then the cotton wool on the top of it, which should not be disturbed oftener than is necessary for cleanliness.

In burns of the third degree, where the deep seated tissues are exposed, the object to be kept in view is to promote the removal of the eschar, prevent putrefaction, and as much as possible suppuration, and assist in the cicatrication of the open wound. This is generally done by applying some stimulating dressing such as carron oil, carbolic oil, turpentine liniment, or resin ointment, and then putting thick layers of cotton wool over all. The wool should be absorbent and antiseptic on account of the suppuration that cannot be avoided, and it should not be disturbed oftener than is necessary for cleanliness. When changed it should be carefully picked off, and those particles that remain washed off with a syphon douch, and a weak solution of carbolic acid, iodine solution or chloride of zinc (10 grains to the oz.) I consider that a syphon should always be used. Washing with a sponge, no matter how carefully used, is likely to detach the epidermis. Picric acid has also lately been used, (picric acid 1, alcohol 15, to water 100 parts). There are articles on it in *The Rec. de Méd. Vét.* of 15th August, 1897, by M. Varion, and 15th April, 1898, by M. Lesage; also in *The Veterinarian* of May, 1898, by Vet.-Captain Pease, Lahore Veterinary College. I have used this dressing and can highly recommend it. The alcohol is used to allow the yellow stain of the acid being easily removed.

After the eschar has been removed the exposed surface is to be treated like an ordinary granulating wound or ulcer, and our chief attention should be directed to promoting the formation of cicatricial tissue without deep adhesion, and preventing deformity by the edges of the ulcer contracting, and this will chiefly be achieved by care and absolute cleanliness in dressing, as well as constitutional treatment. In our patients the chief parts that become deformed are the mouth, nostrils, eyelids, and backs of the knees, front of the hocks, chest, and elbows, but if sufficient skin is lost and the wound not properly treated it may take place anywhere, and as I have before said I have seen one case with permanent deformity and adhesion of the cicatrix in the lumbar region. In dogs, burns of the feet frequently cause contraction and deformity of the toes. In the human being grafts are used to prevent contraction and deformity, as well as in cases where the ulcer is tardy in healing. In our patients this is a difficult and tedious operation,

and I am well aware in the majority of cases impracticable from the surroundings of the case, nevertheless grafting fresh skin is possible, and I have had success both with the pin point and long graft, or Tirsh's method. In cases of indolent ulcers I have found hazeline, the extract of the inner bark of the hammalis virginica, or American witch hazel, act as a beneficial dressing. This drug is official in the U.S. pharmacopœia, and is mentioned in both Squires's and Westcott and Martindale's extra pharmacopœia. Hazeline cream, composed of hazeline with lanoline as a vehicle, is a convenient form for this purpose.

Constitutional Treatment.—Our patients are not so liable to succumb to shock as human beings are, but nevertheless it must not be forgotten as a cause of fatality, for in many instances it exists. The patient should be kept warm, if possible clothed, but if the clothing comes in contact with the injured part it must be dispensed with, and the box or stable artificially warmed, taking care, however, not to interfere with the ventilation. This can be done by putting an oil stove in the adjoining stall or gangway. Small animals can easily be placed in a box or basket and covered with a blanket and placed in front of a fire if necessary. If there are rigors a diffiusable or alcoholic stimulant should be given, and if the pain is very severe an anodyne, such as laudanum, chloral, or an injection of morphia given. A suppository or enema containing chloral I have found useful. When reaction has been established and the severe symptoms of collapse have disappeared, the alcohol should be stopped. Gruel, or, if the patient will drink it, milk should be given, with green food and bran mash, or boiled barley or rice. Water should be given *ad lib.* and a small quantity of dilute sulphuric acid may be added to it. Thin oatmeal gruel or rice water will generally be taken, and is refreshing. If there are pulmonary symptoms they must be treated accordingly, and the same applies with diarrhœa and bowel complication. The cases where the larynx and pharynx have been injured either by boiling fluid or smoke in my opinion the sooner tracheotomy is performed the better. If the feet have been injured the shoes should be taken off as soon as possible, the feet put into cold swabs or a foot bath, or best of all stand the patient in a running stream as long as possible, but my experience is that if the feet are badly injured the hoofs slough off and the case is hopeless. When suppuration has set in and the dead tissue is being thrown off the system requires supporting by a generous diet, and the same rule exists while the ulcer is healing up.

These are all the remarks I have to make on the subject. Very few of them are original, they have been compiled from various sources coupled with my own observations, which possibly are all wrong, and which will be scattered to the four winds of Heaven before I leave the room. I trust, gentlemen, that those amongst you who have seen such injuries will give the Society the benefit of your opinion, and I am selfish enough to hope that I may be a wiser man on this point to-morrow than I am this evening, as I have come before you for my own ends—to obtain, not to impart knowledge.

Discussion.

The Chairman: We have had a very interesting paper on a subject, which, as Major Nunn truly said, did not at first sight, furnish any probabilites of a discussion, but I think now that there is ample material before us for a very interesting discussion. The meeting is now opened, and I shall be glad if a large number of members will avail themselves of the opportunity.

Mr. Butters: First of all I must thank Major Nunn for his able paper. It may be, as he states, that it is not all the result of his observations, but there are very few or us who would be able to compile a paper like that from our own personal experience. I have seen a few cases of severe scalds and burns, but not lately. I cannot say how deep or how severe it is necessary for a burn to be to prove fatal. Although a burn may not prove fatal, if severe, it will probably mean that the horse will have to be got rid of, as the value of same and the length of time it would be under treatment have to be taken into consideration. Blemishes of this sort have of course the effect of reducing the value of the animals; people do not like to see animals walking about with large bare patches on them. I remember a horse falling on a red-hot metal plate. It got badly burnt about the sides, ribs, etc. Being a valuable animal it was put under treatment. After a long time the sloughs healed over sufficiently to make it presentable for working. Major Nunn referred to scalds to the mouth and throat through giving drenches; in my experience most of these cases die where there is extensive burning of the mouth and throat. The classification given by Major Nunn from the French writers is very good, especially that of Boyer, which is one that might be accepted by all veterinary surgeons. With slight burns and scalds we are all more or less familiar. With regard to treatment, I think a covering of flour and the use of carron oil answers very well. Of course where there is deep sloughing the dead portions must be removed where necessary. I must again thank Major Nunn for bringing this matter before us.

Mr. Wragg: I do not think I have come across a severe case of scald or burn. Those which have come under my notice have only been trivial and not caused any constitutional disturbance. I must endorse what my friend Mr. Butters has said regarding this very excellent paper introduced by Major Nunn. His experience seems very extensive. I may say I have used a mixture of lime water and linseed oil in the slight cases above referred to.

Prof. Macqueen: After the apologetic way in which the Major has introduced the paper I must be guarded in saying anything derogatory. The subject is something fresh at any rate, although Major Nunn may have said nothing fresh with regard to it. Burns and scalds are not common, I believe. I have seen horses suffering from burns by sulphuric acid, and from the effects of scalding by steam. I remember an extensive fire in a 'bus yard where several horses were destroyed, and others which were injured lived for a time more or less long. I have seen cases of burning in smaller animals, and like other members of the profession, cases, in a more limited area, in horses I fail to notice any reference by Major Nunn to the pathology of burns and scalds. As I understand the condition of affairs nowadays, the effect upon the skin is to produce necrosis of the tissues involved. I should have expected Major Nunn to have quoted a rather more recent authority than Sir Robert Christison on the effect of the necrosis. Since his time the pathology of same has undergone wondrous changes. As regards the effect of the burn constitutionally—the danger so to speak—I find that where death occurs from a burn it is mainly because a very large surface is affected. Where such is the case it is practically impossible to keep the part aseptic. If, say, a part of the head, trunk, neck, or chest is burnt until the muscular tissue is exposed, you will quite understand it is by no means easy to apply dressings.

As to the treatment of burns; small ones do not, I think, present any difficulty—I find a very useful application for diminishing pain is a mixture of tinct. of opium and tinct. of camphor. For the larger burns that occur in horses we are compelled to use something that does not require a bandage; in many cases owing to the position and extensive surface bandages cannot be applied. If we could prevent suppuration there is no doubt that ordinary wounds caused by burning would be just as amenable to treatment as others. The results of such injuries are sometimes severe and permanent, and have

after effects which frequently prove serious. It is customary to speak of another condition as a result of burns, that is ulceration. The treatment of this, however, is a special subject and a long one. Then there is another feature of the healing or non-healing process in the case of burns and that is retraction of the skin. Major Nunn alluded to it as a permanent deformity.

My last word with regard to this subject is that the chief difficulty attending scalds and burns is the extensive surface destroyed, and to keep the remedies in position.

I must compliment Major Nunn upon entering a ground which is not often introduced to a veterinary society. He has an aptitude for bringing forward curious ideas, and manages to dress them up in a very satisfactory manner. I think we must congratulate him if only for wresting some of these exceptional things from their slumber.

Mr. SINGLETON: My experience of scalds and burns has been exceedingly limited. I had a case some time ago of a horse badly burned in the foreleg, a part easily treated as far as position, and he recovered. Then I had the case of a cat—a rather troublesome patient—which had been thrown or fallen into some recently slacked lime. When I was sent for and saw the cat he was covered with lime—the difficulty, of course, was to try and remove same, which, however, I ultimately succeeded in doing. The animal was thoroughly washed with extract of and subsequently recovered. With others I am very much obliged to Major Nunn for his valuable paper.

Mr. SAMSON: During 30 years practice I do not think I have come across many cases of scalds and burns, but two serious cases have come under my notice. One was caused by an explosion in a firework factory, and the other was the case of a horse which had stumbled and fallen among some burning embers of rubbish in Battersea Park. Before it could be got up it was badly burnt. It was brought to my place, and was six months before it recovered. As a dressing I used a mixture of liq. plumbi acetas and olive oil. I prefer olive oil to linseed, the latter being sticky. I much prefer, for large wounds, to dress with a syringe with several large holes in the end, as you get your dressing all over the surface. The case mentioned was in the hot summer weather, and I had the utmost difficulty to keep the flies off. I tried fine gauze, and also some finely powdered starch which I carbonised.

Mr. ROWE: I occasionally get called upon to attend to small animals, such as dogs and cats. As Mr. Singleton stated, dogs not infrequently get scorched by slaked lime left about where buildings are in course of erection. In such cases I generally trim the hair off round the injury and dress with carron oil, and afterwards dust over with oxide of zinc.

Mr. W. E. TAYLOR: My experience of scalds and burns has been slight. I remember some 20 years ago a fire broke out down at my home, one horse was burned to death and another severely injured. The treatment we adopted was to dust the wounds with starch and iodine—a drachm of iodine to two ounces of starch. The horse made a very good recovery in about three months.

Mr. PERRYMAN: Major Nunn has, I believe, purposely left out any reference to burns from the action of chemicals. I have had two cases of acid burns. One, a horse got out of his stable and kicked over a carboy of sulphuric acid. When I saw it the animal seemed simply scorched. I had the greatest difficulty to limit the area of the burn. It was two or three days before I was able to tell how much sloughing would take place. I also found it extremely difficult to touch the animal, as it was very sensitive. We saturated the limb with oil and then dusted it with flour mixed with oxide of zinc. At the end of a fortnight great masses of skin sloughed away. The second case was very similar, except that some attendants were in the yard and immediately flushed the leg with water.

Major NUNN, in reply, said some of the gentlemen who have spoken have mentioned burns and scalds from drugs, but this subject I purposely avoided. I have adhered to Boyer's classification. I could, of course, enlarge on the subject, but you will probably consider the paper was quite long enough. Several gentlemen have alluded to injuries from slaked lime, sulphuric acid, etc., I have seen many such cases as these. I am disappointed that no member has said whether or no he has come across a case of ulceration or congestion of the duedonem, which is so fatal and common in the human being. Mr. Butters mentioned that he used carron oil as a dressing, and it is a very good thing too—some of the things which I referred to might be regarded as a refinement of treatment, only within reach of those horseowners who wanted the very best and could afford to pay for it. For ordinary purposes the cheaper dressings answer very well. I am much obliged to Professor Macqueen for his remarks, and for his reminder about deformity taking place in the sheath and fold under the flank. With regard to skin grafting, if I am not detaining the Society I should like to mention a curious case which came under my notice. A horse was being ridden by a certain officer in the Afghan war when it received a cut across the tail from a long Afghan knife, it was a slicing blow and took off a portion of the right haunch, leaving a long strip of flesh loose. The horse was attended to by an Indian farrier, and recovered, but had a long graft growing out of its quarter.

Professor Macqueen said there was nothing special about scalds and burns, and as far as he says, with regard to lesions, there is nothing special. I thank Mr. Samson for his valuable hint about applying dresssings with a syringe which has several large holes in the nozzle. As most of my professional life has been spent in tropical countries I can quite appreciate what he says with reference to flies—there is a Mahommedan saying that the devil takes the form of a fly—and we have to carefully guard against them. If the wound is of any extent it must be carefully covered with gauze, and generally a special oil is used, known as Gurgeon oil, it is extracted from a tree the botanical name of which I forget. Mr. Taylor mentioned iodine and starch, it is a preparation which I believe was brought to notice by an Austrian military surgeon who used it for soldiers' feet, after hard and continued marching.

Mr. PORCH: I beg to propose a vote of thanks to Major Nunn. The subject dealt with is one which does not frequently come under our notice in general practice, and I feel sure we have all been exceedingly interested in listening to the paper and the discussion which followed.

Seconded by Mr. Singleton, and carried with acclamation.

A vote of thanks to the Chairman terminated the proceedings.

ROYAL VETERINARY COLLEGE V.M.A.

The 264th ordinary general meeting of the Association was held in the New Theatre of the College on Friday, 13th January, 1899, at 6.30 p.m. Mr. D. Rait in the chair. There were present Professor Hobday (president), Professor Shave (hon. treas.), Mr. J. B. Walker, M.R.C.V.S., (hon. sec.), Messrs. Woodruff and Peacey, M.R.C.V.S., 50 members and two visitors.

Mr. ELPHICK was elected a member of Council in the place of Mr. Goodall, M.R.C.V.S., lately qualified.

After the exhibition of some morbid specimens kindly sent by Mr. B. P. Godfray, M.R.C.V.S., Jersey, and some

ingenious inventions of a country smith, exhibited by Mr. Thackeray, Mr. Elphick read a carefully prepared, highly instructive, and most interesting essay on "Sheep, their Breeds, Management, and Some of their Diseases."

Afterwards Mr. Robb opened the discussion on Mr. Liddall's essay "Disinfectants and Disinfection," read before the Association at its last meeting, and in this Messrs. McIlvenna, Wooldridge, Woodruff, and Peacey took part.

Votes of thanks to Mr. Siddall and the Chairman terminated the proceedings.

J. M. TATE, *Assist. Sec.*

"TICK FEVER" IN AUSTRALIA.

Tick fever is still agitating the minds of the agricultural classes of the whole of Australia. The matter is of such vital importance to pastoralists and herd owners that both the veterinary and the medical professions are earnestly implored to assist in devising some means towards neutralising the effects of the pest or doing something towards stamping it out. A quarantine line has been defined in Queensland beyond which cattle from the northern plains, to which the tick is at present confined, are not permitted to pass. About three years ago the tick pest was first discovered in Queensland in the neighbourhood of Rockhampton. Although at that time it was believed that it could not live in subtropical climates, it began to spread southward, and the Government adopted at once certain lines or zones from north of which no exportation of cattle was permitted. As the disease spread this line had to be removed southward, and now it has reached as far south as the Brisbane coast. Over 6,000,000 head of cattle are now quarantined in Queensland, and the mortality is very great. Other pests, like locusts and grasshoppers, have frequently enough after remaining quiescent perhaps even for years suddenly been seized with the migratory impulse, and have then traversed the whole continent of Australia. The inoculation of healthy beasts with the blood derived from animals recovered of the tick fever has certainly proved successful in warding off severe attacks of the fever in bullocks that have eventually contracted the disease through having crossed into infected tracts. But there is another factor to be considered, and that is, Does inoculation do harm? It would seem from recent experiments that it does harm to bullocks susceptible to the disease. The hœmocytometer reveals that anæmia in many cases is produced, and this anæmia does not tend readily to recovery. The hæmoglobin is diminished. The micro-parasites, pyrosoma bigeminum, may live for years in the blood of recovered cattle. The capillaries of the organs are rich in germs, but they are very scanty in the blood of the general circulation. Since the microparasites persist for long periods in the blood of the capillaries of the principal organs, it is obvious enough that in some cases a chronic anæmia may result from their presence. They invade the red blood cells, and bring about their destruction. They multiply in the blood, producing crescent-shaped bodies stuffed with spores. The capsule containing the spores burst, liberating the contents, and eventually the spores develop into adult form. The tick is the intermediary host for the development of this parasite, and in some way or another the parasite gets out of the body of the tick into the blood of the cattle when infected with the ixodes.—*Brit. Med. Journal.*

BRIBES OR PRESENTS.

In the Court of Appeal, on Tuesday, 17th January, before Lords Justices A. L. Smith, Chitty, and Collins, an appeal was heard of the defendant from a judgment of Mr. Justice Day, in an action "Shipway v. Broadwood," at Worcester Assizes. The defendant had agreed to buy a pair of horses from the plaintiff for £200, on condition that they were passed as sound by a veterinary surgeon named Pinkett. They were so passed, and the defendant sent the plaintiff a cheque for £200; but he subsequently had the horses examined by another veterinary surgeon, who certified that they were unsound, Whereupon the horses were returned to the plaintiff, who refused to accept them. The defendant then stopped payment of the cheque, The plaintiff sued the defendant for the £200, and judgment was given in his favour. But at the trial Pinkett admitted that the plaintiff told him he would give him something if the horses were sold, and it was on this admission that the appeal was based, counsel for the appellant contending that the payment or offer of a bribe by the vendor to the veterinary surgeon rendered the contract invalid. For the respondent, it was contended that the point ought to have been taken at the trial, and could not be raised now, and also that the evidence did not show that Pinkett had ever received the alleged bribe. Their Lordships held that, in view of the admission of Pinkett, the contract of sale could not be upheld, and allowed the appeal, with costs generally to the appellant, but as he had not, as he might have done, taken the point at the trial, there would be no costs of the appeal.—*Times.*

ARMY VETERINARY DEPARTMENT.

From *The London Gazette*:

WAR OFFICE, PALL MALL, Jan. 17.

Vet.-Lieut. J. S. Wood resigns his commission.

OBITUARY.

JOHN SNARRY, V.S., Norton, Malton.

The remains of the late Mr. John Snarry were interred in the Norton Cemetery on Thursday, January 5th. There was a large attendance of old friends of the deceased, who had been in practice as a veterinary surgeon at Malton for many years. Deceased was a brother of Mr. James Snarry, the well-known breeder, of Musley Bank, Malton, who attended the obsequies, with over 20 members of various branches of the family. The comparatively sudden death of Mr. Snarry recalls a singular exploit in his professional career—one which at the time caused considerable interest in the veterinary and agricultural world. In the course of his ordinary practice as a veterinary surgeon he was called to attend a valuable shorthorn cow which had broken its leg The owner, although greatly valuing the animal for prospective breeding purposes, wanted to have the cow destroyed, but the deceased would try an experiment. He amputated the leg, and had a wooden leg made for the cow. This he fitted on so well, and treated the case so scientifically, that the cow completely recovered and for a long time stumped about with its wooden appendage, to the admiration of many interested visitors. Not only so, but the animal in due time bred for its owner a valuable calf, which, be it remarked, did not hereditarily succeed to the said defect of its unfortunate parent. "The cow with the wooden leg" obtained great notoriety at the time, and Mr. Snarry was widely congratulated on his skill and ingenuity.—*The Evening Press.*

CORRESPONDENCE

UNQUALIFIED CASTRATORS

Dear Sir,

Permit me a word of reply to my venerable friend. It is not my desire to enter any controversy on this subject, nor do I wish the Council of the Royal College to take away from you your means of livelihood ; it is only to stop fresh men from entering your field without qualifications. As you have had no college training I will refrain from bringing physiology into this subject except to say that the ability to castrate is not simply handed down from generation to generation without practice, and the idea that to sleep with a castrator is sufficient to impart the knowledge is exploded. You and all of us have to have a beginning, and practice makes perfect. Holding the Diploma of the Royal College ought not to make a man any the worse operator, although I grant with all due respect to teachers and examiners that the men gaining the diploma like myself find it very difficult to stand against this struggle for existence in country districts, which is becoming keener every day. Castration forms such an important item on our ledger that it behoves us to see that fresh men do not come and take away our living.

We must progress if we are to keep pace with the times. Dentists require a diploma, why should not castrators of the domesticated animals? This is quite as important in our patients.

"My dear friend," don't think that I wish to take away your living ; you must remember in course of time young men will have to take your place, and it appears to me if our profession is to advance, certificated men only should be allowed to adopt this calling.

G. Upton.

CHLOROFORM.

Sir,

Mr. Gray's communication in your issue of December 10th is highly instructive, when compared with results I obtained with pure chloroform administered by Snow's method, for producing and maintaining in horses deep anæsthesia by continuous inhalation.

(1) I gave chloroform last September to a carriage horse of about 15 hands, a mare, nine years old. I commenced administration with 1 minim stroke of the piston, then 2, 3, 4, and at last 5 minim strokes with the commencement of each inspiration, when deep anæsthesia was produced and operation commenced in twenty minutes.* The whole amount of chloroform used was 2 oz. 6dr. 38 min. Respiration was 17 per minute, which gives an average of 12·93 minims of chloroform used per minute. The mare was carefully prepared by good and careful feeding before the time of operation.

(2) A chestnut cob of 14-3 hands, age 6 years, constitution poor, alternating respiration 26 per minute, grass fed. Whole time of administration 1 hour 35 minutes, amount used 2½ ounces, no excitement of any kind. Deep anæsthesia and operation commenced in 10 minutes. Perfect recovery, the horse got up in about 10 minutes. Average amount of chloroform used per minute 12·63 minims, equal to 0·49 minim per inspiration.

(3) Bay mare of 15-2 hands, aged 12 years, in good condition, respiration 26 per minute, grass fed. Time of administration 1 hour 35 minutes, amount used 3 oz., no excitement of any kind. Deep anæsthesia and operation commenced in 10 minutes. Recovery perfect without ill effect. Average of chloroform used per minute 15·1ms., equal to 0·6ms. per inspiration.

Whether the short time taken to produce Snow's third degree of narcotism in both these last two cases was due to the horses being operated on having up to the time of operation being entirely fed on grass, and operated upon on the field they were grazing in, without any preparation, I am not prepared to state. But when performing operations on horses carefully prepared by good and careful feeding before the time of operation, I have noticed that they take a longer time to respond to the chloroform, and require more chloroform to produce anæsthesia than horses fed on grass.

Mr. Gray used three ounces of chloroform for inducing, and five ounces more for maintaining anæsthesia, but did not state the whole time in which the eight ounces were administered.

The chloroform apparatus that I am now using is the latest invention of Mr. C. W. Krohne, of the firm of Krohne and Sesemann, the well-known veterinary instrument makers, of 8, Duke Street, Manchester Square, London, and is made for the express purpose of administering chloroform according to Snow's method. The last two cases I mention were noted by my assistant, Mr. L. W. Lloyd, of the New Veterinary College, Edinburgh, (student), and myself whilst performing operations at Crowborough, near Tunbridge Wells, Kent.

Although I have used the apparatus repeatedly this last year I have, unfortunately, not kept proper notes on all cases, but should consider that the ones here quoted show the average amount of chloroform used by Snow's method of producing chloroform anæsthesia.

Owing to the little time I have now at my disposal, I am sorry not to have been able to write this letter before. It was my intention to send it for publication in *The Veterinary Record* the week following Mr. Gray's interesting communication.

H. Karslake Tasker, M.R.C.V.S.

39 Eversley Road, Bexhill-on-Sea, Sussex.
January 13th, 1899.

* It should be borne in mind that the first stroke of the piston which vaporises 5 minims of chloroform at its first temperature (62 to 65dgs. F.) vaporises only about one half, and even less of that amount, the nearer the end of a prolonged administration, owing to the chloroform's temperature getting lower and lower with each successive stroke of the piston.

THE AMEER'S VETERINARIAN.

Dear Sir,

The Mr. Clements (or Clemence as it is correctly spelt) mentioned in last week's *Record*, is neither a veterinary surgeon nor registered practitioner. To the best of my knowledge he served the Ameer Abdurrahman in the capacity of stud-groom—perhaps of late he has "risen."—I am, yours faithfully,

M.R.C.V.S.

Communications, Books, and Papers received :—Messrs J. Wilson Barker, H. K. Tasker, J. B. Tutt, M. Hedley Reg. T. Wall, G. Upton, J. D. Pottie, W. Tart, J. M. Tate F. W. Cosgrove, F. G. Ashley. Col. W. S. Adams.

"*The Stable*," *Journal of The Sanitary Institute*, *The Crewe Guardian*, *The Peterborough and Hants Standard*, *The Devon and Exeter Gazette*. *The Evening Press* (York). *The Belfast News Letter*, *The Lynn Advertiser*.

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from local papers containing facts of interest.

Communications for the Editor to be addressed 20 Fulham Road, S.W.